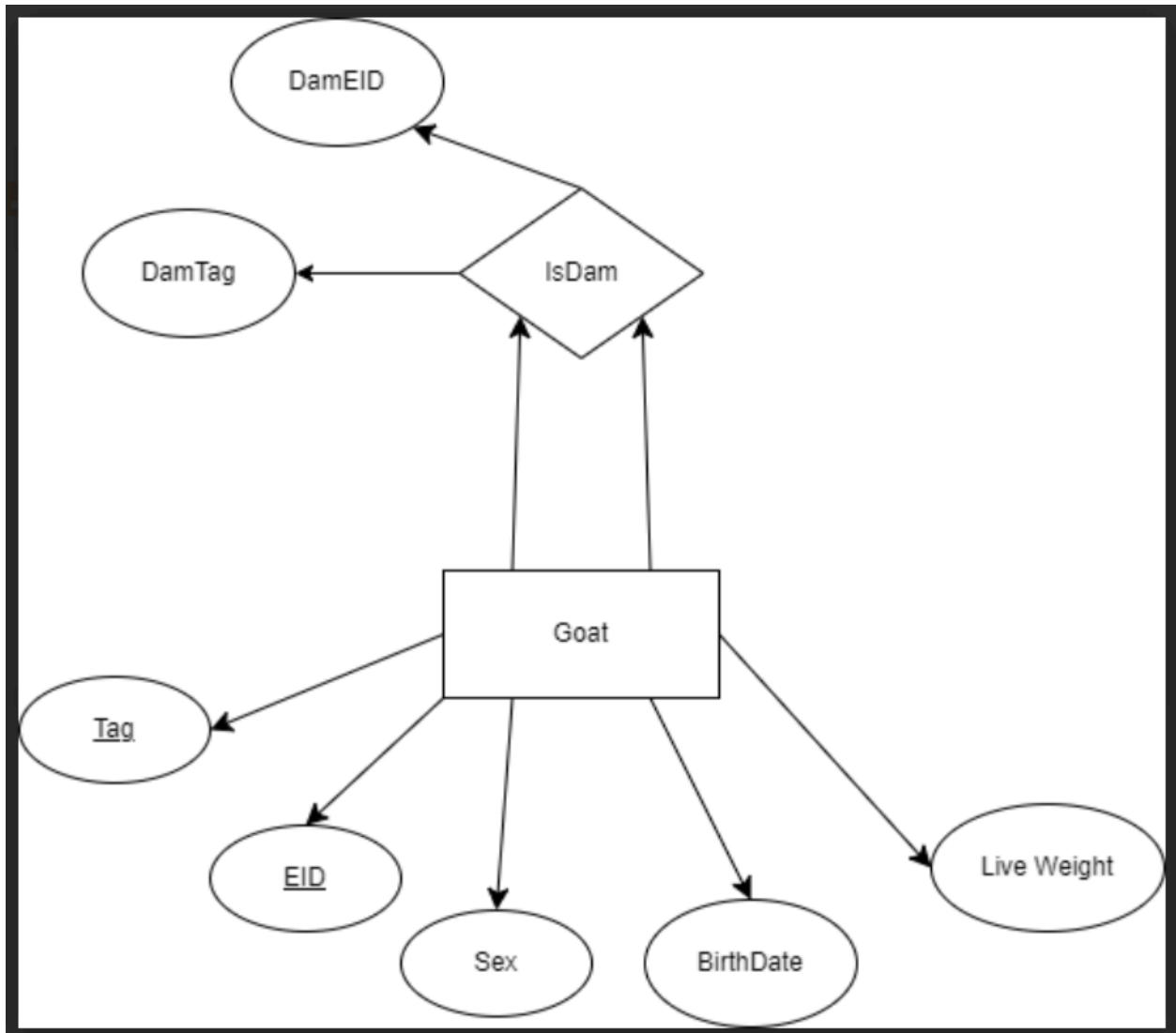


Stakeholder ER Diagram and Personal Project ER Diagram:



Stakeholder relational schema and Personal Project relational schema:



The IsDam relationship is 1:N, since a dam can have many kidd's. Therefore we used DamEID and DamTag as a foreign key to represent the IsDam relationship. Also, a goat has a unique tag and EID number. In our schema, each goat has a dam and stores a relation dam as a foreign key.

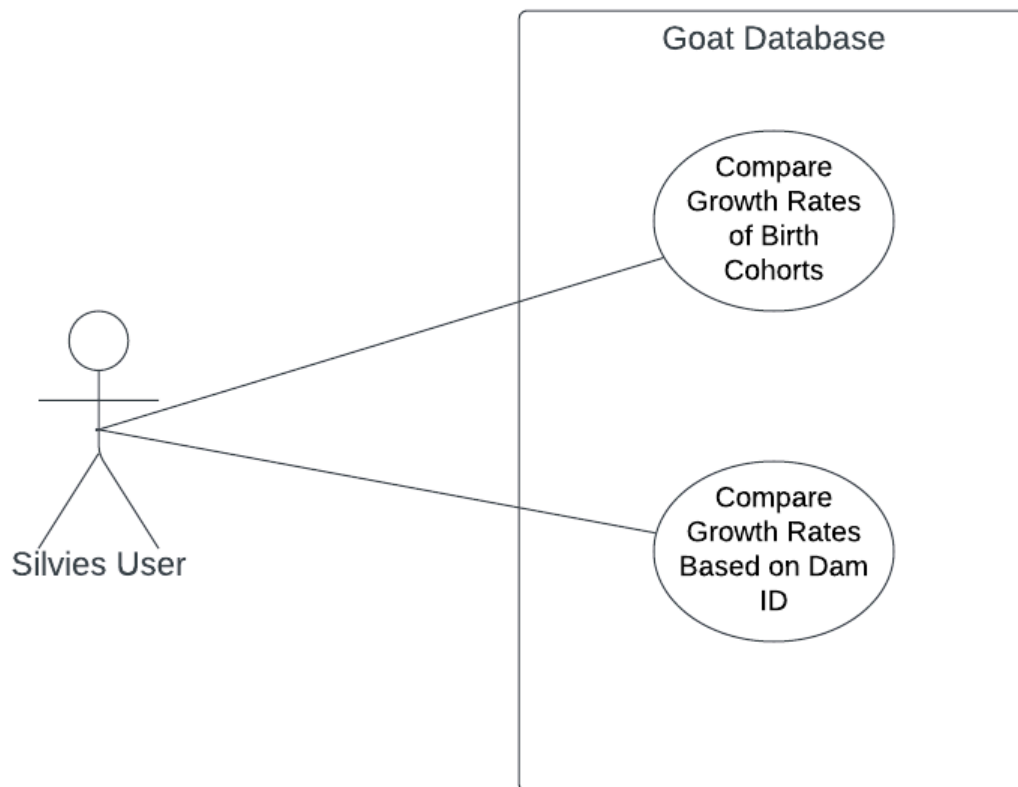
We estimate that our initial database size will be 3,500 to 7,000, since we estimate the ranch holds 500 to 1,000 goats and each goat will hold 7 attributes.

For our personal project I estimate the number of searches required per query would be the number of goats in the selected dams bloodline.

For our stakeholder topic I estimate the number of searches required per query would be the size of each birth cohort.

This is because for our personal topic we would like to group our analysis by familial lineages and for our stakeholder topic we analyze the goats by their groups of birth cohorts as well as the herd as a whole.

Use Case Diagram:



Use Case 1: Compare Growth Rates of Birth Cohorts

1. System prompts user for a birth cohort.
2. User enters a valid birth cohort.
3. System validates the birth cohort.
4. System provides a graph showing the average growth rate of that birth cohort.

5. System prompts user for another birth cohort.
6. User enters a different valid birth cohort.
7. System validates the different birth cohort and ensures it's not the same as the first.
8. System overlays the two graphs to allow comparison.

#### Use Case 2: Compare Growth Rates Based on Dam ID

1. System prompts user for a dam ID.
2. User enters a valid dam ID.
3. System validates the dam ID.
4. System provides a graph showing the average growth rate of that dam's lineage
5. System prompts user for another dam ID.
6. User enters a different valid dam ID.
7. System validates the different dam ID and ensures it's not the same as the first.
8. System overlays the two graphs to allow comparison.